[0024] Figure 1 provides a schematic block diagram representing the methods of the present invention. It will be apparent that the steps recited herein may be practiced in any order and certain steps may be subtracted or added, as deemed appropriate for a particular intended use. For example, it may be appropriate to only characterize the flow of the potential site or it may be appropriate to only characterize the type of sample obtainable from the site. Still further, it might be appropriate to characterize the type of sample obtainable from the site first, followed by a characterization of the flow, etc. The subject methods will be described herein as serial, i.e., performing site flow characterization first and/or performing sample type characterization second, where such a serial description is by way of example only and not limitation. It is to be understood, and will be apparent, that any sequence of steps or subtractions and/or additions of such steps is contemplated by this invention.

[0025] Turning now to the Figures, Figure 1 is a flow chart of the subject methods used to determine a suitable sampling site. The first step in the subject methods is to select a potentially suitable physiological fluid sampling site (step 1). As described above, the potentially suitable site is typically on the fingers, arms, legs, earlobes, heels, feet, nose and toes, usually on the fingers or arms. Flow characterization is then performed, in other words, a determination of whether the site is a high flow site or a low flow site is made (step 2). The appropriateness of the site for a particular test is then determined (steps 3 and 4). If the site is found inappropriate, another potentially suitable site is then selected (return to step 1). If appropriate, sample type characterization may then be performed (steps 5 and 6). More specifically, a potential site is then characterized as having the ability to produce or express substantially arterial sample, substantially venous sample or neither, i.e., substantially interstitial fluid. The appropriateness of the sample type for a particular test is then determined (step 7). If the site is found inappropriate, another potentially suitable site is then selected (return to step 1). In certain embodiments, once the site is determined to be suitable for a particular testing protocol, the target physiological sample is accessed and collected from the site (steps 8 and 9). The presence and/or concentration of one or more analytes in the sample may also be determined by the subject methods, often times automatically (step 10).

I. Site flow Characterization

[0026] As described above, the subject methods include the flow characterization of a potentially suitable sampling site. In other words, the flow or flow rate or velocity of the potential site is characterized, where a high flow rate will yield relatively larger sample volumes as compared to a low flow rate site. A variety of methods may be used to determine the flow characteristics of a potential site, where temperature determination and/or red blood cell ("RBC") characterization such as RBC flux, as will be described below, are of particular interest. Using temperature, for example, high temperature is associated with high flow and low temperature is associated with low flow. In the case of RBC characterization, e.g., RBC flux, a high RBC flux is associated with high flow and low RBC characterization, e.g., RBC flux, is associated with low flow. Each of these methods will now be described in greater detail.

A. Temperature Characterization

[0027] In many embodiments of the subject methods, flow characterization, *i.e.*, characterizing the flow or flow rate or velocity of a potential site, is determined by measuring the temperature of a potential site, on the principle that higher fluid flow is associated with higher temperature than a relatively lower flow of fluid would be. Accordingly, the temperature of a site is determined, where such a temperature may include one or more measurements, e.g., a plurality of measurements may be made and a statistically relevant value (mean, median, etc.) may be determined. Regardless of the number of measurements made at a potential site, a temperature value or signal relating to the temperature is determined, where the temperature or value or signal associated therewith may then be compared to a predetermined value. For example, if a temperature were determined to be above a predetermined value typically ranging from about 30.5°C to 35°C, usually from about 31°C to 32°C, for example, the site would be determined to have a high flow. Alternatively, if the temperature were to fall below a predetermined value, such as below a range that is typically from about 29°C to 30.5°C and usually from about 29°C to 30°C, the site would be determined to have a low flow. Alternatively, or in addition to the above method employing a predetermined value to which the measured value is compared, in those instances where the best available site is sought amongst a plurality of sites tested, i.e., the most appropriate site in relation to other sites tested, the temperature value may be compared to other sites' temperatures.

[0028] This temperature measurement method may be in place of, or in addition to, other flow characterization methods, *e.g.*, red blood cell flux, as will be described below. In those embodiments where the temperature measurement is in addition to other flow characterization methods, the temperature measurement may be performed before, during or at the same time as the other method(s).

[0029] Typically, this temperature characterization occurs in about 0.5 to 180 seconds and more usually in about 0.75 to 60 seconds, but usually takes no more than about 10 seconds.

[0030] More specifically, a temperature sensor such as a thermocouple, e.g., a thermocouple associated with the subject devices as will be described below, measures the temperature of the sampling site. Such a measurement may be processed by a microprocessor working under the control of a software program. The measurement is made, communicated to the microprocessor and the microprocessor may perform all the steps, calculations and comparisons necessary to determine the flow characteristics of a site.

B. RBC Characterization

[0031] In place of, or in addition to, the above described temperature methods, the flow of a potential site may be characterized by determining the RBC character of the site, e.g., RBC flux of the site. In other words, a determination of a high RBC flux corresponds to high flow and a determination of a low RBC flux corresponds to low flow, as mentioned above.

[0032] To determine flow based on RBC characteristics, techniques based upon the frequencies of light or more particularly the change in the frequencies of light as the light encounters objects in its path such as RBCs, may be used. For example, techniques employing Doppler flowmetry methods may be employed, where Doppler flowmetry is well known in the art and includes the transmission and measurement of light, i.e., laser Doppler flowmetry (see for example *Berardesca et al., Bioengineering of the Skin: Cutaneous Blood Flow and Erythmea*, CRC Press, (1995)). RBC characterization may be in addition to, or in place of, other site flow characterization methods. Where RBC characterization is in addition to other methods, the methods may be performed at the same or different times.